

Parallel grippers DHPS

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Parallel grippers DHPS

Key features

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At a glance

General information

- Resilient and precise T-slot guide of the gripper jaws
- Oval piston for high gripping forces
- High gripping forces with compact dimensions
- Gripper jaw centring options
- Max. repetition accuracy
- Gripping force retention
- Internal fixed flow control
- Wide range of options for mounting on drive units

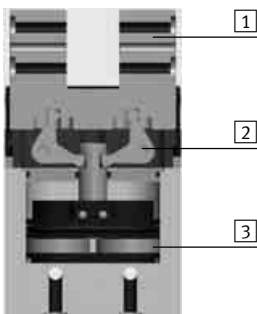
- Sensor technology:
 - Adaptable position sensor for the small grippers
 - Integratable proximity sensors for the medium and large grippers

Flexible range of applications

- Can be used as a double-acting and single-acting gripper
- Compression spring for supplementary or retaining gripping forces
- Suitable for external and internal gripping

The technology in detail

Gripper closed



Gripper open



- 1 Gripper jaw
- 2 Reversing lever
- 3 Piston with magnet

Note
Gripper selection
sizing software
→ www.festo.com

Position sensing/force control

With position transmitter SMAT-8M, SDAT



Analogue positional feedback possible

- Analogue output
 - 0 ... 10 V
 - 4 ... 20 mA

With proportional pressure regulator VPPM



Infinite adjustment of the gripping force possible

- Setpoint input
 - 0 ... 10 V
 - 4 ... 20 mA

With proximity sensor SMT-8G/-10G



Multiple positions can be sensed:

- Open
- Closed
- Workpiece gripped

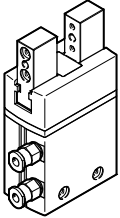
Parallel grippers DHPS

Key features

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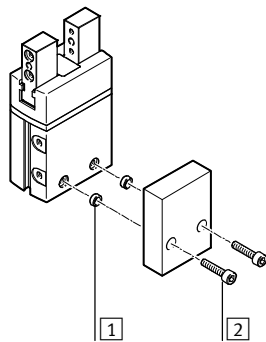
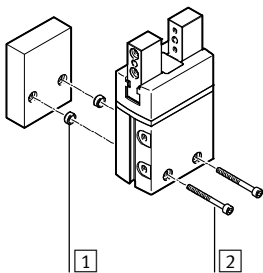
Supply ports

At the side

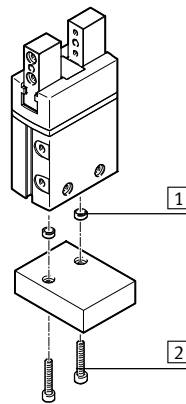


Mounting options

At the side

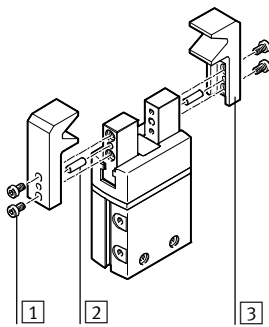


From underneath



- 1 Centring sleeves
- 2 Mounting screws

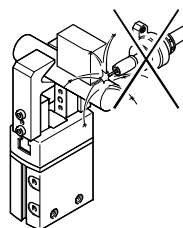
Mounting options for external gripper fingers



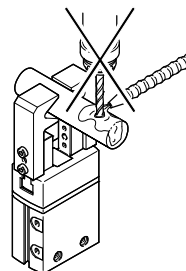
- 1 Mounting screws
- 2 Centring pins
- 3 Gripper fingers

- - Note

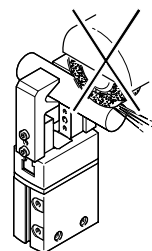
These grippers are not designed for the following or similar sample applications:



- Welding spatter



- Machining
- Aggressive media



- Grinding dust

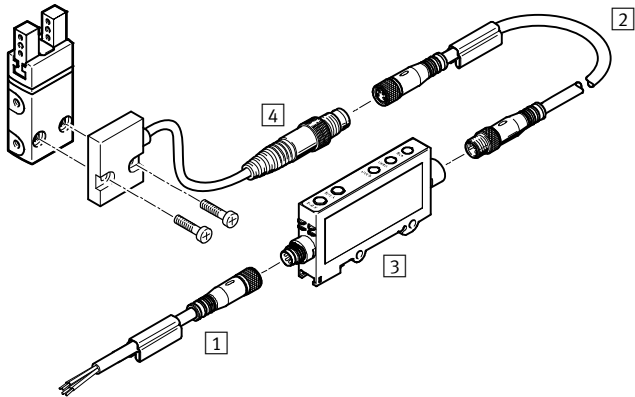
Parallel grippers DHPS

Peripherals overview

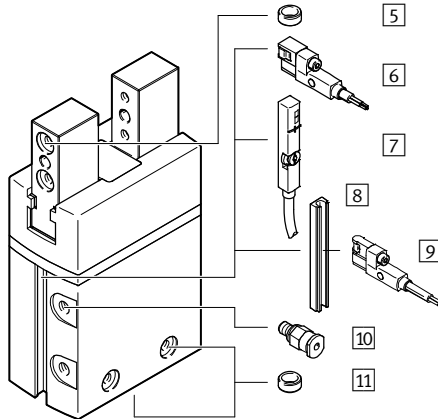
FESTO

Peripherals overview

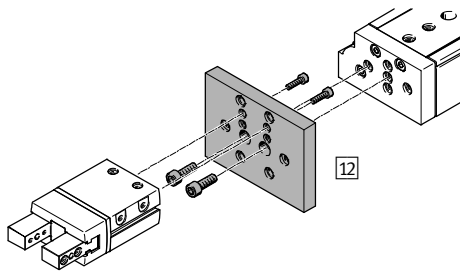
DHPS-6



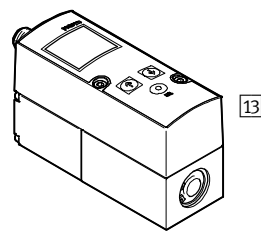
DHPS-10 ... 35



System product for handling and assembly technology



Proportional pressure regulator VPPM



Parallel grippers DHPS

Peripherals overview

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Accessories			
Type	Size	Description	→ Page/Internet
1 Connecting cable NEBU	6	• Connection between signal converter and controller	21
2 Connecting cable NEBU	6	• Connection between position sensor and signal converter	21
3 Signal converter SVE4	6	• For evaluating signals for position sensor SMH-S1	21
4 Position sensor SMH-S1	6	• Adaptable and integratable sensor technology, for sensing the piston position	21
5 Centring sleeve ZBH	6 ... 35	• For centring the gripper fingers on the gripper jaws • The delivery scope of the gripper for size 10 and above includes 4 centring sleeves	20
6 Proximity sensor SMT-8G	10 ... 35	• For sensing the piston position • Proximity sensor does not project past the housing at the bottom	22
7 Position transmitter SMAT-8M	10 ... 35	• Continuously senses the position of the piston. Has an analogue output with an output signal in proportion to the piston position.	22
Position transmitter SDAT	35		
8 Bondable sensor rail HGP-SL	10 ... 35	• Enables the use of proximity sensors SME/SMT-10	20
9 Proximity sensor SMT-10G	10 ... 35	• For sensing the piston position • Proximity sensor does not project past the housing at the bottom • With sensor rail HGP-SL10-...	22
10 Push-in fitting QS	6 ... 35	• For connecting compressed air tubing with standard O.D.	qs
11 Centring sleeve ZBH	6 ... 35	• For centring the gripper when mounting • The scope of delivery of the gripper includes 2 centring sleeves	20
12 Adapter kit DHAA, HMSV, HAPG, HAPS, HMVA	6 ... 35	• Connecting plate between drive and gripper	16
13 Proportional pressure regulator VPPM	6 ... 35	• For infinite adjustment of the gripping force	vppm

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Type codes



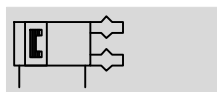
		DHPS	–	16	–	A	–	
Type								
DHPS	Parallel gripper							
Size								
Position sensing								
A	Via proximity sensor							
Gripping force retention								
NO	Opening							
NC	Closing							

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Technical data

Function
Double-acting
DHPS-...-A



- Ø - Size
6 ... 35 mm

- I - Total stroke
4 ... 25 mm

- T - www.festo.com

Function – Variants
Single-acting or
with gripping force retention ...
... opening DHPS-...-NO



... closing DHPS-...-NC



General technical data						
Size	6	10	16	20	25	35
Design	Lever					
	Forced motion sequence					
Mode of operation	Double-acting					
Gripper function	Parallel					
Guide	Plain-bearing guide					
Gripping force retention	–	NO, NC	NO, NC	NO, NC	NO, NC	NO, NC
Number of gripper jaws	2					
Max. load per external gripper finger ¹⁾ [g]	10	60	150	250	350	450
Stroke per gripper jaw [mm]	2	3	5	6.5	7.5	12.5
Pneumatic connection	M3	M3	M3	M5	G1/8	G1/8
Repetition accuracy ²⁾ [mm]	≤ 0.02					
Max. interchangeability [mm]	≤ ±0.2					
Max. operating frequency [Hz]	4			3		2
Rotational symmetry [mm]	< Ø 0.2					
Position sensing	Via position sensor	Via proximity sensor, position transmitter				
Type of mounting	Via through-hole and centring sleeve					
	Via female thread and centring sleeve					
Mounting position	Any					

1) Valid for unthrottled operation

2) End-position drift under constant conditions of use with 100 consecutive strokes in the direction of movement of the gripper jaws

Operating and environmental conditions						
Size	6	10	16	20	25	35
Min. operating pressure						
DHPS-...-A	[bar]	2				
DHPS-...-A-N	[bar]	–	4			
Max. operating pressure	[bar]	8				
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]				
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)				
Ambient temperature ¹⁾	[°C]	+5 ... +60				
Corrosion resistance class CRC ²⁾		1				

1) Note operating range of proximity sensors

2) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Parallel grippers DHPS

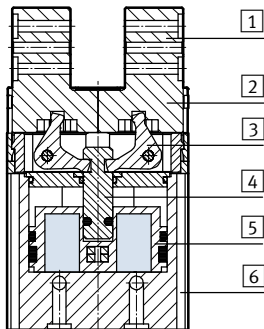
Technical data

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Weight [g]						
Size	6	10	16	20	25	35
DHPS-...-A	19	67	184	380	700	1285
DHPS-...-A-N	–	68	188	387	713	1345

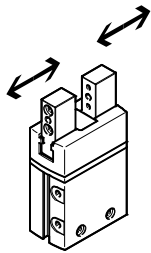
Materials

Sectional view



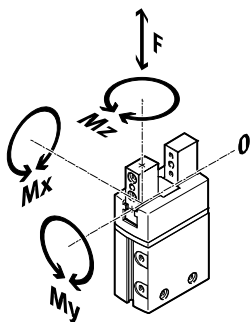
Parallel gripper		
1	Gripper jaw	High-alloy stainless steel
2	Cover cap	Polyamide
3	Reversing lever	Hardened sintered steel
4	Piston rod	Tempered steel
5	Piston	Polyacetal
6	Housing	Hard anodised wrought aluminium alloy
–	Seals	Nitrile rubber
–	Note on materials	Free of copper and PTFE
		RoHS-compliant

Gripping force [N] at 6 bar



Size	6	10	16	20	25	35
Gripping force per gripper jaw						
DHPS-...-A	Opening	15	39	105	162	249
	Closing	13.5	34.5	96	147	228
Total gripping force						
DHPS-...-A	Opening	30	80	210	320	500
	Closing	25	70	190	290	450

Characteristic load values at the gripper jaws



The indicated permissible forces and torques apply to a single gripper jaw. They include the lever arm, additional applied loads due to the workpiece or external gripper fingers and

acceleration forces occurring during movement.

The zero coordinate line (gripper jaw guide) must be taken into consideration for the calculation of torques.

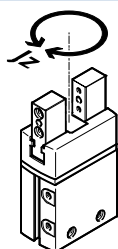
Size	6	10	16	20	25	35
Max. permissible force F_z	[N]	10	60	150	250	350
Max. permissible torque M_x	[Nm]	0.5	3	8	14	30
Max. permissible torque M_y	[Nm]	0.5	3	8	14	30
Max. permissible torque M_z	[Nm]	0.5	3	8	14	30

Parallel grippers DHPS

Technical data

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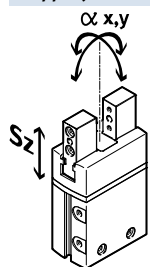
Mass moment of inertia [kgm²x10⁻⁴]



Mass moment of inertia of the parallel gripper in relation to the central axis, without external gripper fingers, without load.

Size	6	10	16	20	25	35
DHPS-...-A	0.01	0.08	0.47	1.49	3.83	12.70
DHPS-...-A-NO	–	0.08	0.47	1.52	3.92	12.83
DHPS-...-A-NC	–	0.08	0.47	1.49	3.84	12.73

Gripper jaw backlash



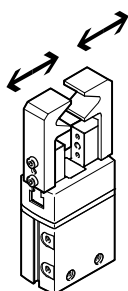
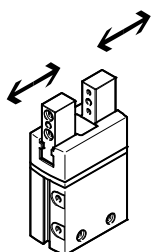
The plain-bearing guide used in the grippers means that there is backlash between the gripper jaws and the housing. The values entered in the table for the backlash were calculated in accordance with the traditional accumulative tolerance method.

Size	6	10	16	20	25	35
Max. gripper jaw backlash S_z	≤ 0.02 [mm]					
Max. gripper jaw angular backlash α_x, α_y	≤ 1 [°]		≤ 0.5 [°]			

Opening and closing times [ms] at 6 bar

Without external gripper fingers

With external gripper fingers



The indicated opening and closing times [ms] were measured at room temperature at an operating pressure of 6 bar with horizontally mounted grippers without additional gripper

fingers. The grippers must be throttled for greater loads [g]. Opening and closing times must then be adjusted accordingly.

Size		6	10	16	20	25	35
Without external gripper fingers							
DHPS-...-A	Opening	8	21	33	59	48	95
	Closing	17	28	41	87	63	123
DHPS-...-A-NO	Opening	–	19	32	58	45	88
	Closing	–	30	50	97	78	151
DHPS-...-A-NC	Opening	–	58	48	72	68	131
	Closing	–	24	37	62	52	99
With external gripper fingers (as a function of the load per gripper finger)							
DHPS-...	20 g	50	–	–	–	–	–
	100 g	–	50	–	–	–	–
	125 g	–	100	–	–	–	–
	150 g	–	200	–	–	–	–
	200 g	–	–	100	–	–	–
	250 g	–	–	200	–	–	–
	300 g	–	–	300	100	–	–
	350 g	–	–	–	200	–	–
	400 g	–	–	–	300	100	–
	500 g	–	–	–	–	200	–
	600 g	–	–	–	–	300	200
	750 g	–	–	–	–	–	300

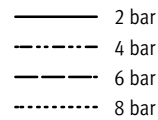
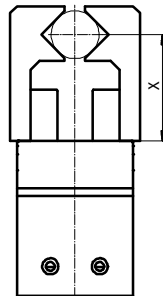
Parallel grippers DHPS

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Gripping force F_H per gripper jaw as a function of operating pressure and lever arm x

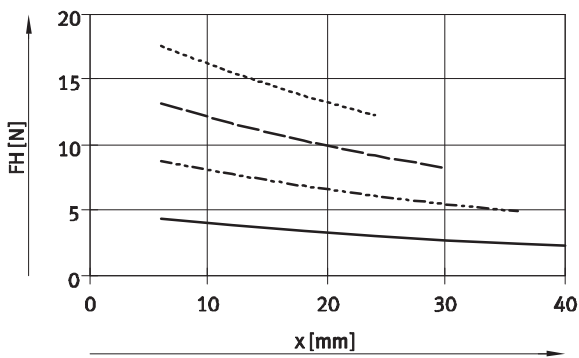
The gripping forces as a function of operating pressure and lever arm can be determined from the following graphs.



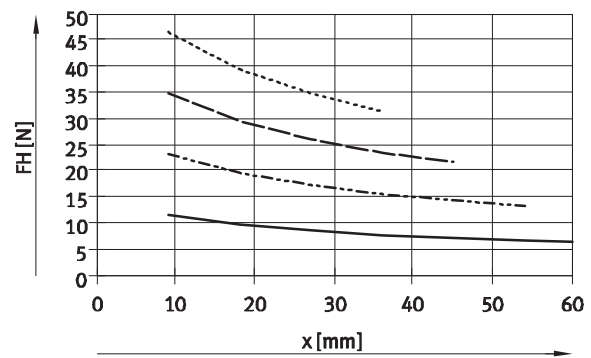
Note
Gripper selection
sizing software
→ www.festo.com

External gripping (closing)

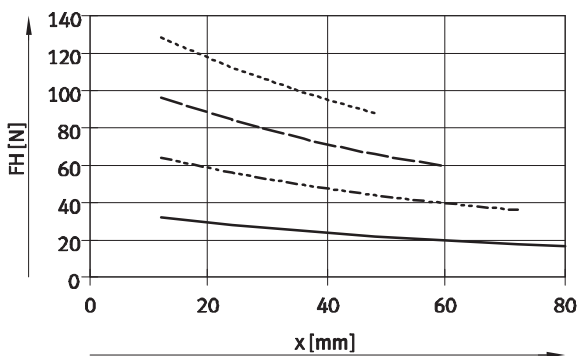
DHPS-6



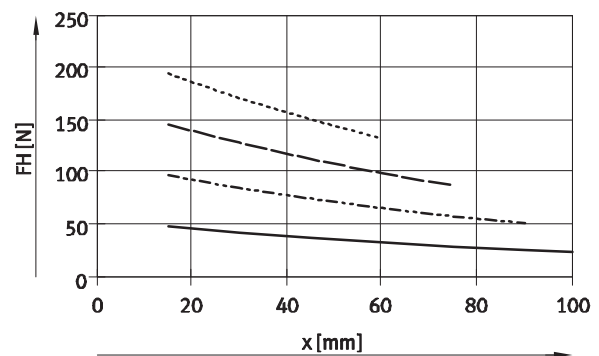
DHPS-10



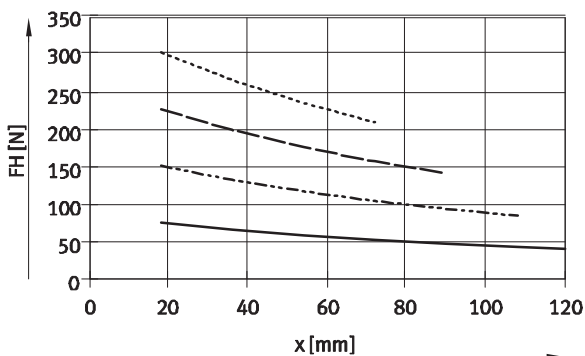
DHPS-16



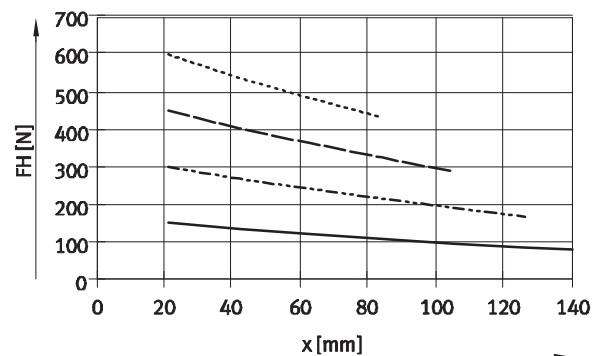
DHPS-20



DHPS-25



DHPS-35



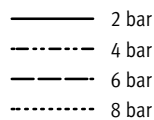
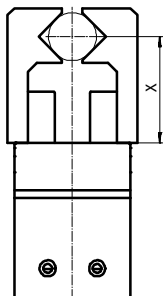
Parallel grippers DHPS

Technical data

FESTO

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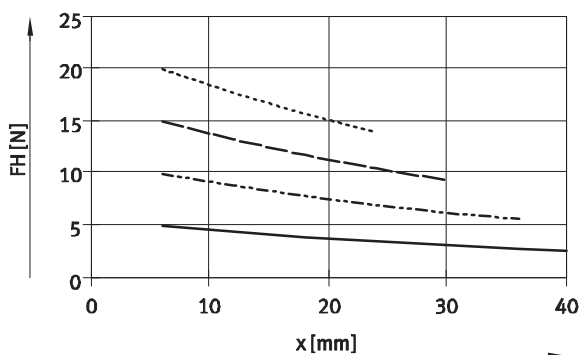
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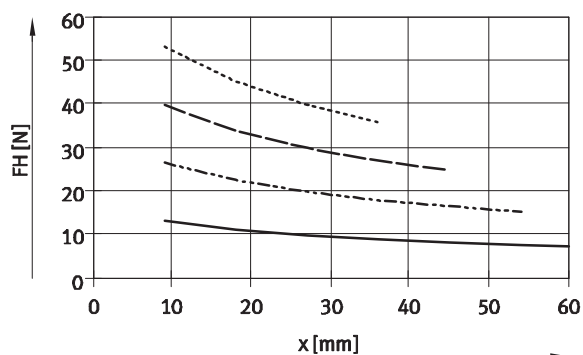
Note
Gripper selection
sizing software
→ www.festo.com

Internal gripping (opening)

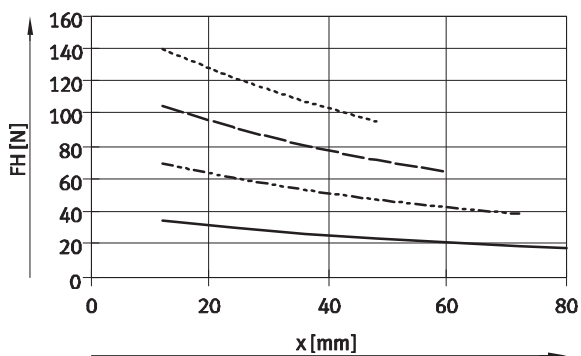
DHPS-6



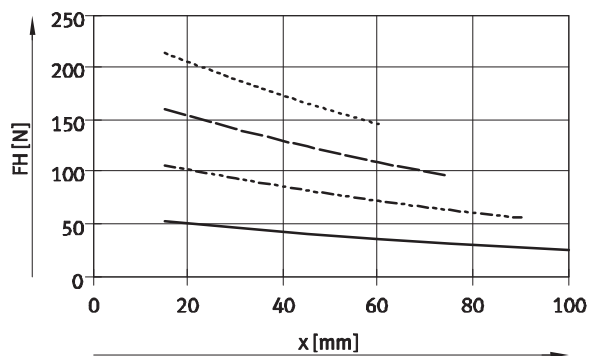
DHPS-10



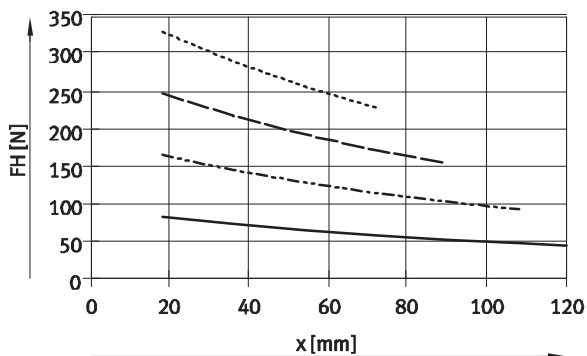
DHPS-16



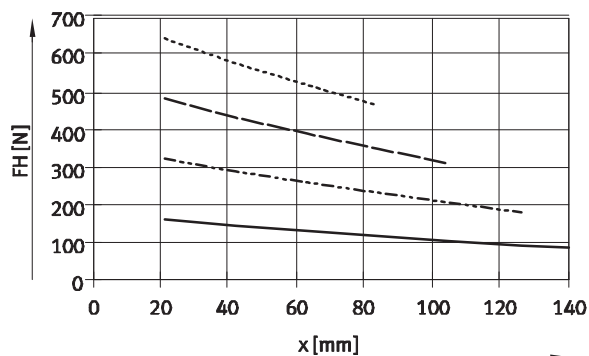
DHPS-20



DHPS-25



DHPS-35



Parallel grippers DHPS

Technical data

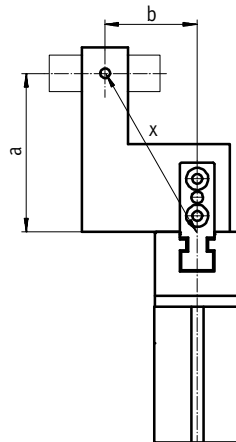
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Gripping force F_H per gripper jaw at 6 bar as a function of lever arm x and eccentricity a and b

The following formula must be used to calculate the lever arm x with eccentric gripping:

$$x = \sqrt{a^2 + b^2}$$

The gripping force F_H can be read from the graphs (→ page 10/11) using the calculated value x .



Calculation example

Given:

Distance $a = 25$ mm

Distance $b = 20$ mm

To be calculated:

The gripping force at 6 bar,
with a DHPS-16,
used as an external gripper

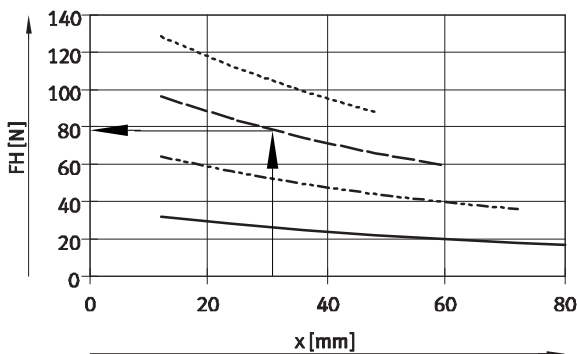
Procedure:

Calculating the lever arm x

$$x = \sqrt{25^2 + 20^2}$$

$$x = 32 \text{ mm}$$

The graph (→ page 10) gives a value
of $F_H = 79$ N for the gripping force.



Parallel grippers DHPS

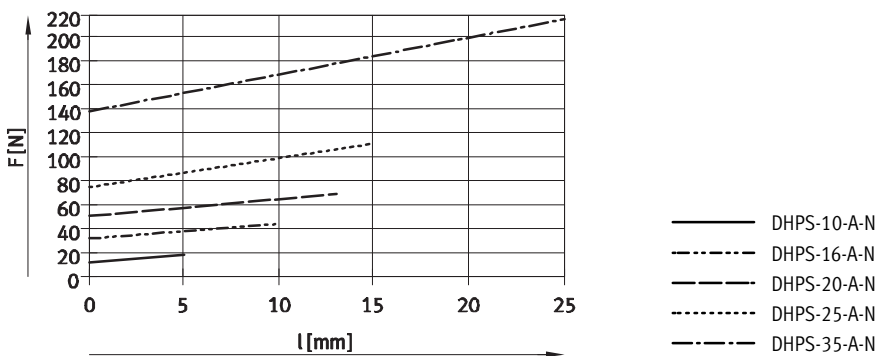
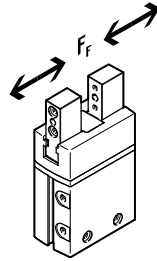
Technical data

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Spring force F_F as a function of size and total gripper jaw stroke l

Gripping force retention for DHPS-...-N...

The spring forces F_F as a function of gripper jaw stroke l can be determined from the following graph.



Spring force F_F as a function of size, gripper jaw stroke l and lever arm x per gripper finger

The lever arm x must be taken into consideration when determining the actual spring force F_{Ftotal} .

The formulae for calculating the spring force are provided in the table below.

Gripping force retention	Size	F_{Ftotal} per gripper finger
NO, NC	10	$-0.02 \cdot x + 0.5 \cdot F_F$
	16	$-0.08 \cdot x + 0.5 \cdot F_F$
	20	$-0.1 \cdot x + 0.5 \cdot F_F$
	25	$-0.12 \cdot x + 0.5 \cdot F_F$
	35	$-0.19 \cdot x + 0.5 \cdot F_F$

Determination of the actual gripping forces F_{Gr} for DHPS-...-NO and DHPS-...-NC as a function of application

The parallel grippers with integrated spring type DHPS-...-NO (opening gripping force retention) and DHPS-...-NC (closing gripping force retention) can be used as

- single-acting grippers

- grippers with supplementary gripping force and
- grippers with gripping force retention depending on requirements.

In order to calculate the available gripping forces F_{Gr} (per gripper jaw), the gripping force (F_H) and spring

force (F_{Ftotal}) must be combined accordingly.

Application

Single-acting	Supplementary gripping force	Gripping force retention
- Gripping with spring force: $F_{Gr} = F_{Ftotal}$ - Gripping with pressure force: $F_{Gr} = F_H - F_{Ftotal}$	Gripping with pressure and spring force: $F_{Gr} = F_H + F_{Ftotal}$	Gripping with spring force: $F_{Gr} = F_{Ftotal}$

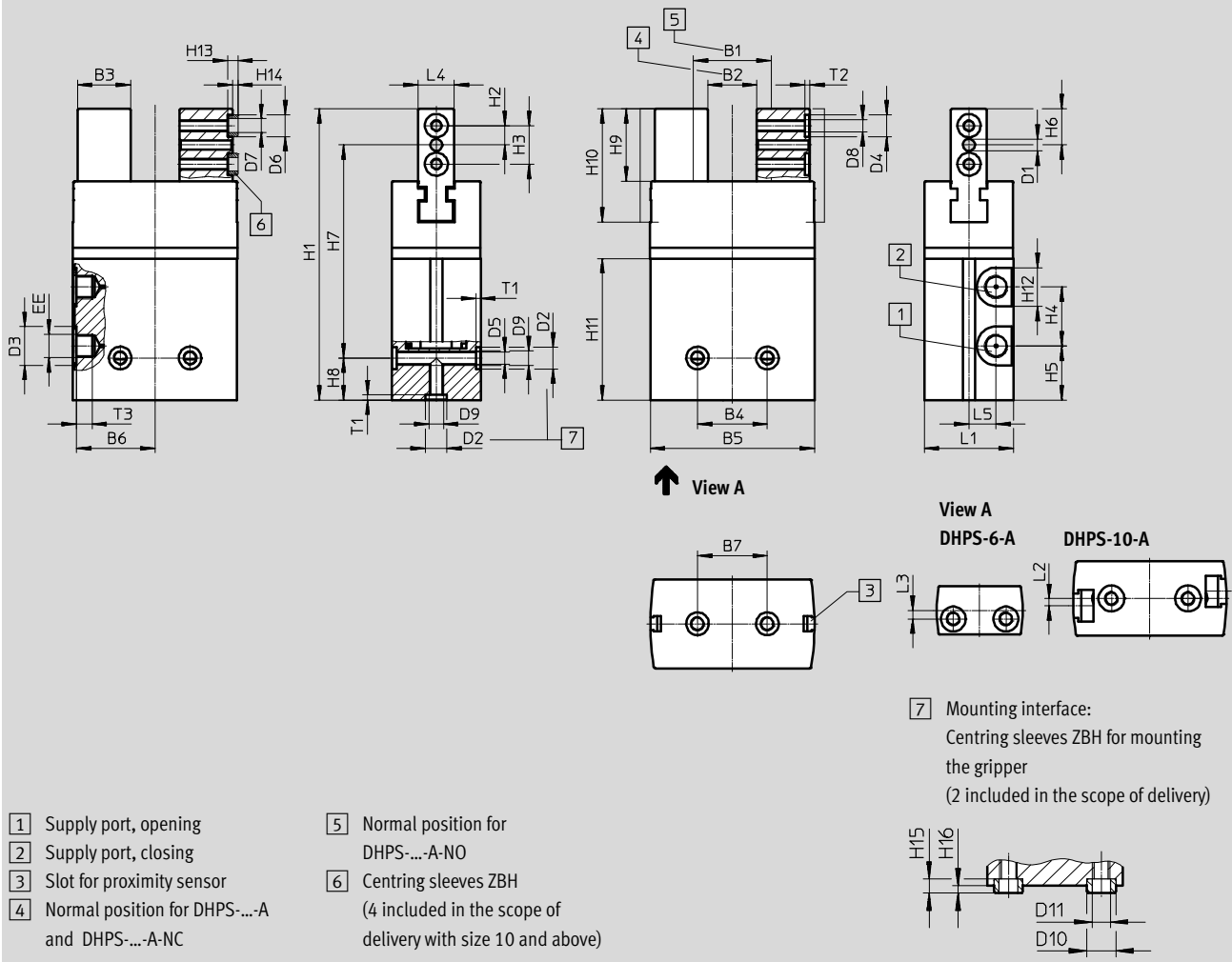
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Dimensions

Download CAD data → www.festo.com



Size	B1	B2	B3	B4 ¹⁾	B5	B6	B7 ¹⁾	D1	D2	D3	D4
[mm]	±0.5	±0.5	-0.03		±0.1			Ø H8	Ø H8	Ø	Ø H8
6	10	6	5.5	11	18	8.65	11	1.5	5	7	—
10	21.8	15.8	7	16	32	15.4	16	2	5	7	5
16	27.8	17.8	13	25	47	22.65	25	3	7	7	7
20	30	17	17.5	25	55.6	26.65	25	4	7	10	7
25	35.4	20.4	22	29	68.2	32.65	29	4	9	16	9
35	56	31	27	33	88	42.25	33	5	12	16	9

1) Tolerance for centring hole ±0.02 mm; tolerance for thread ±0.1 mm

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Size [mm]	D5 Ø +0.1	D6 Ø h7	D7 Ø	D8	D9	D10 Ø h7	D11 Ø	EE	H1	H2	H3 ¹⁾
6	2.5	–	–	M2	M3	–	–	M3	45.5	2.9	5.8
10	2.5	5	3.2	M3	M3	5	3.2	M3	66	4	8
16	3.3	7	5.3	M4	M4	5	3.2	M3	80	5.5	11
20	3.3	7	5.3	M4	M4	7	5.3	M5	101	7	14
25	5.1	9	6.4	M5	M6	9	6.4	G1/8	121	8	16
35	6.4	9	6.4	M6	M8	12	10.3	G1/8	142	8.5	17

Size [mm]	H4	H5	H6	H7 ±0.2	H8 ²⁾	H9	H10	H11	H12	H13 –0.2	H14 –0.3
6	15	4	5	33	7.5	9.55	15.8	25.3	7	–	–
10	15.5	10.5	7.5	51	7.5	15.2	23	35	7	2.4	1.2
16	18	11	10	62.5	7.5	20	32.5	38.1	7	3	1.4
20	23	16	12.5	81	7.5	25	39.5	50	10	3	1.4
25	24.5	22.5	15	88.5	17.5	30	47	58.8	16	4	1.9
35	29	24	16	108.5	17.5	32	53	65.3	16	4	1.9

Size [mm]	H15 –0.2	H16 –0.3	L1	L2	L3 ¹⁾	L4 –0.05	L5	T1 +0.1	T2 +0.1	T3 +0.5
6	–	–	10 ^{+0.1}	–	1.8	5	1.5	1.2	–	3.5
10	2.4	1.2	15.5 ^{+0.1}	1.5	–	7	5	1.2	1.2	5
16	3	1.4	22 ^{+0.1}	–	–	10	7	1.6	1.6	6
20	3	1.4	30 ^{±0.1}	–	–	12	9	1.6	1.6	6
25	4	1.9	37 ^{±0.1}	–	–	15	11.3	2.1	2.1	6.5
35	4	1.9	45 ^{+0.1}	–	–	20	13.5	2.6	2.1	6.5

1) Tolerance for centring hole ±0.02 mm; tolerance for thread ±0.1 mm

2) Tolerance for centring hole –0.05 mm; tolerance for thread ±0.1 mm

Ordering data						
Size [mm]	Double-acting without compression spring		Single-acting or with gripping force retention			
	Part No.	Type	Opening Part No.	Type	Closing Part No.	Type
6	1254039	DHPS-6-A	–		–	
10	1254040	DHPS-10-A	1254041	DHPS-10-A-NO	1254042	DHPS-10-A-NC
16	1254043	DHPS-16-A	1254044	DHPS-16-A-NO	1254045	DHPS-16-A-NC
20	1254046	DHPS-20-A	1254047	DHPS-20-A-NO	1254048	DHPS-20-A-NC
25	1254049	DHPS-25-A	1254050	DHPS-25-A-NO	1254051	DHPS-25-A-NC
35	1254052	DHPS-35-A	1254053	DHPS-35-A-NO	1254054	DHPS-35-A-NC

Parallel grippers DHPS

Accessories

FESTO

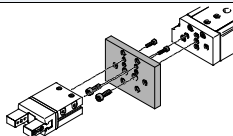
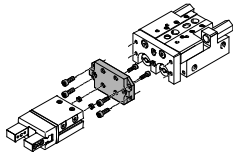
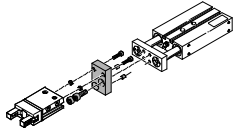
Adapter kit
HAPG, HAPS, HMSV

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant



Note

The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/gripper combinations with adapter kit					Download CAD data → www.festo.com		
Combination	Drive Size	Gripper Size	Mounting option		Adapter kit		
					CRC ¹⁾	Part No.	Type
DGSL/DHPS	DGSL	DHPS			HMSV		
	4, 6	6	■	■	2	548783	HMSV-53
	8, 10	10	■	■		548784	HMSV-54
	12, 16	16	■	■		548785	HMSV-55
	20, 25	20, 25	■	■		548786	HMSV-56
SLT/DHPS	SLT	DHPS			HAPS		
	6	6	■	–	2	178447	HAPS-1
	16	10	■	–		178449	HAPS-3
	20	16, 20	■	–		178450	HAPS-4
	25	25	■	–		178451	HAPS-5
DPZ/DHPS	DPZ	DHPS			HAPG		
	10, 16	10	■	–	2	163250	HAPG-1
	16	16, 20	■	–		163251	HAPG-2
	20	16, 20	■	–		163252	HAPG-3
	25, 32	25	■	–		163253	HAPG-4

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Parallel grippers DHPS

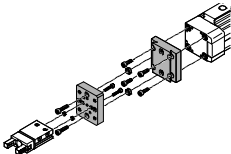
Accessories

FESTO

Adapter kit
HAPG, HMSV, HMVA

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant

 **Note**
The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/gripper combinations with adapter kit					Download CAD data ➔ www.festo.com		
Combination	Drive	Gripper			Adapter kit		
	Size	Size	Mounting option		CRC ¹⁾	Part No.	Type
							
DGPL , DGE-..., DGEA/DHPS	DG...	DHPS			HMVA, HAPG, HMSV		
	Direct mounting						
	18 ²⁾ , 25, 32 ³⁾	6	■	■	2	196788	HMVA-DLA18/25
						192706	HAPG-37-S1
	40	6	■	■		196790	HMVA-DLA40
						192706	HAPG-37-S1
	18 ²⁾ , 25, 32 ³⁾	10	■	■		196788	HMVA-DLA18/25
						192705	HAPG-36-S1
	40	10	■	■	196790	HMVA-DLA40	
					192705	HAPG-36-S1	
	18 ²⁾ , 25, 32 ³⁾	16	■	■	196788	HMVA-DLA18/25	
					193922	HAPG-37-S4	
	40	16	■	■	196790	HMVA-DLA40	
					193922	HAPG-37-S4	
	Dovetail mounting						
	18 ²⁾ , 25	10	■	■	2	196788	HMVA-DLA18/25
						177767	HMSV-27
	32 ³⁾	10	■	■		196789	HMVA-DL32
						177767	HMSV-27
	40	10	■	■		196790	HMVA-DLA40
						177767	HMSV-27
	18 ²⁾ , 25	16	■	■		196788	HMVA-DLA18/25
						177768	HMSV-28
	32 ³⁾	16	■	■		196789	HMVA-DL32
						177768	HMSV-28
	40	16	■	■		196790	HMVA-DLA40
						177768	HMSV-28
	32 ³⁾	25	■	■		196790	HMVA-DL32
						177769	HMSV-29
40	25	■	■	196790	HMVA-DLA40		
				177769	HMSV-29		
40	35	■	■	196790	HMVA-DLA40		
				177770	HMSV-30		

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

2) Only for DGEA-...

3) Only for DGPL

Parallel grippers DHPS

Accessories

FESTO

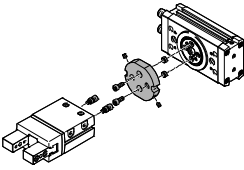
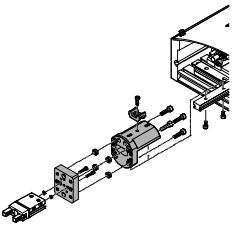
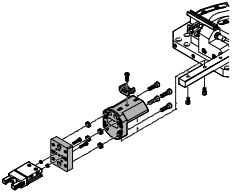
Adapter kit
DHAA, HAPG

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant



Note

The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/gripper combinations with adapter kit					Download CAD data → www.festo.com		
Combination	Drive	Gripper			Adapter kit		
	Size	Size	Mounting option		CRC ¹⁾	Part No.	Type
							
DRRD/DHPS	DRRD	DHPS			DHAA		
	8	6	■	■	2	2808892	DHAA-G-Q11-8-B1-6
	10	6	■	■		2807644	DHAA-G-Q11-10-B1-6
	12	6	■	■		2805783	DHAA-G-Q11-12-B1-6
	12	10	■	■		2802687	DHAA-G-Q11-12-B1-10
	16	10	■	■		2190504	DHAA-G-Q11-16-B1-10
	16	16	■	■		2190393	DHAA-G-Q11-16-B1-16
	16	20	■	■		2187838	DHAA-G-Q11-16-B1-20
	20	16	■	■		2190284	DHAA-G-Q11-20-B1-16
	20	20	■	■		2187713	DHAA-G-Q11-20-B1-20
	20	25	■	■		2185820	DHAA-G-Q11-20-B1-25
	25	16	■	■		1471634	DHAA-G-Q11-25-B1-16
	25	20	■	■		1722652	DHAA-G-Q11-25-B1-20
	25	25	■	■		1725707	DHAA-G-Q11-25-B1-25
	32	25	■	■		2186909	DHAA-G-Q11-32-B1-25
	32	35	■	■		2187316	DHAA-G-Q11-32-B1-35
	35, 40	35	■	■		2187606	DHAA-G-Q11-35/40-B1-35
HSP/DHPS	HSP	DHPS			HAPG		
	12	6	■	—	2	192709	HAPG-60-S1
	16	6	■	—		540881	HAPG-70-B
						192706	HAPG-37-S1
	16	10	■	—		540882	HAPG-71-B
						192705	HAPG-36-S1
	25	10	■	—		540882	HAPG-71-B
25	16	■	—	192705	HAPG-36-S1		
				540883	HAPG-72-B		
193922	HAPG-37-S4	540883	HAPG-72-B				
HSW/DHPS	HSW	DHPS			HAPG		
	12, 16	6	■	—	2	192706	HAPG-37-S1
	12, 16	10	■	—		540882	HAPG-71-B
						192705	HAPG-36-S1
						540882	HAPG-71-B

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Parallel grippers DHPS

Accessories

FESTO

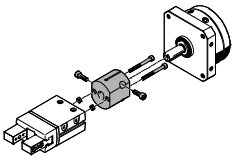
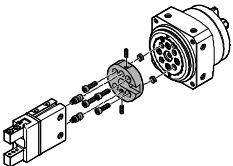
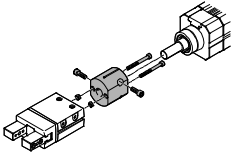
**Adapter kit
HAPG**

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant



Note

The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/gripper combinations with adapter kit					Download CAD data → www.festo.com		
Combination	Drive	Gripper	Mounting option		Adapter kit		
	Size	Size			CRC ¹⁾	Part No.	Type
							
	DSM-...-FW	DHPS			HAPG		
	6, 8, 10	6	■	■	2	187568	HAPG-34
	DSM-...	DHPS			HAPG		
	12	10	■	■	2	163266	HAPG-17
	16	10	■	■		163267	HAPG-18
	16	16, 20	■	■		163268	HAPG-19
	25	16, 20	■	■		163269	HAPG-20
	25	25	■	■		163270	HAPG-21
	32	25	■	■		163271	HAPG-22
	DSM-...-HD	DHPS			DHAA		
	12	6	■	■	2	8071899	DHAA-G-R3-12-B18-6
	12	10	■	■		8072157	DHAA-G-R3-12-B18-10
	16	10	■	■		8071917	DHAA-G-R3-16-B18-10
	16	16	■	■		8079173	DHAA-G-R3-16-B18-16
	25	16, 20	■	■		8071956	DHAA-G-R3-25-B18-16
	32	25	■	■		8079208	DHAA-G-R3-32-B18-25
	DSL	DHPS			HAPG		
	16	10	■	■	2	163266	HAPG-17
	20	10	■	■		163267	HAPG-18
	20	16, 20	■	■		163268	HAPG-19
	25	16, 20	■	■		163269	HAPG-20
	25	25	■	■		163270	HAPG-21
	32	25	■	■		163271	HAPG-22

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Parallel grippers DHPS

Accessories

FESTO

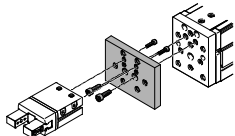
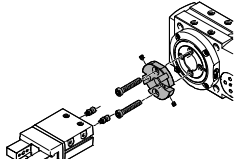
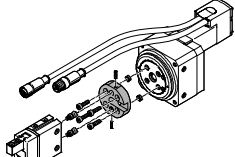
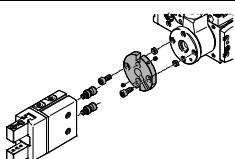
Adapter kit
DHAA, HAPG, HMSV

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant



Note

The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/gripper combinations with adapter kit					Download CAD data → www.festo.com		
Combination	Drive Size	Gripper Size	Mounting option		Adapter kit		
					CRC ¹⁾	Part No.	Type
EGSL/DHPS	EGSL	DHPS			HMSV		
	35	6	■	■	2	548783	HMSV-53
						1088262	HMSV-70
	35	10	■	■		548784	HMSV-54
						1088262	HMSV-70
	45, 55	16	■	■		548785	HMSV-55
	75	20, 25	■	■		548786	HMSV-56
ERMB/DHPS	ERMB	DHPS			HAPG		
	20	16, 20	■	■	2	184479	HAPG-SD2-3
	25	16, 20	■	■		184482	HAPG-SD2-6
	20	25	■	■		184480	HAPG-SD2-4
	25	25	■	■		184483	HAPG-SD2-7
	32	25	■	■		184485	HAPG-SD2-9
	32	35	■	■		184486	HAPG-SD2-10
ERMO/DHPS	ERMO	DHPS			DHAA		
	12	6	■	■	2	8071899	DHAA-G-R3-12-B18-6
	12	10	■	■		8072157	DHAA-G-R3-12-B18-10
	16	10	■	■		8071917	DHAA-G-R3-16-B18-10
	16	16	■	■		8079173	DHAA-G-R3-16-B18-16
	25	16, 20	■	■		8071956	DHAA-G-R3-25-B18-16
	32	25	■	■		8079208	DHAA-G-R3-32-B18-25
EHMB/DHPS	EHMB	DHPS			HAPG		
	20	25	■	■	2	184485	HAPG-SD2-9
	20	35	■	■		184486	HAPG-SD2-10
	25, 32	35	■	■		526027	HAPG-SD2-21

Parallel grippers DHPS

Accessories

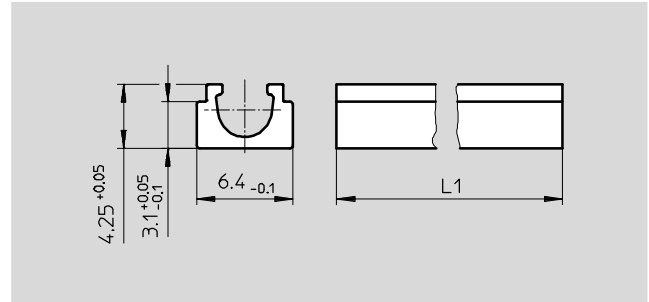
FESTO

Sensor rail HGP-SL

can be glued into place

Material:

Wrought aluminium alloy



Dimensions and ordering data					
For size [mm]	L1	Weight [g]	Part No.	Type	
10	35	1.4	535582	HGP-SL-10-10	
16	38	1.5	535583	HGP-SL-10-16	
20	50	2.0	535584	HGP-SL-10-20	
25	58	2.3	535585	HGP-SL-10-25	
35	65	2.6	535586	HGP-SL-10-35	

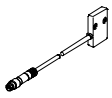
Ordering data						
	For size [mm]	Description	Weight [g]	Part No.	Type	PU ¹⁾
Centring sleeve ZBH				Technical data → Internet: zbh		
	10	For centring the gripper fingers on the gripper jaws	1	189652	ZBH-5	10
	16, 20		1	186717	ZBH-7	
	25, 35		1	150927	ZBH-9	
	6, 10	For centring the gripper when mounting	1	189652	ZBH-5	
	16, 20		1	186717	ZBH-7	
	25		1	150927	ZBH-9	
	35		1	189653	ZBH-12	

1) Packaging unit

Parallel grippers DHPS

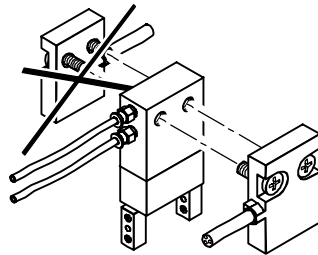
Accessories

FESTO

Ordering data				
Type	For size	Weight [g]	Part No.	Type
Position sensor SMH-S1			Technical data → Internet: smh-s1	
	6	20	175710	SMH-S1-HGP06

Installation instructions for position sensor SMH-S1

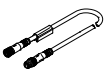
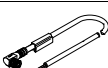
To guarantee the functionality of the position sensor, the outlet for the cable and the compressed air tubing must be facing the same direction during installation.



Signal converter SVE4 for position sensor SMH-S1

- Converts analogue signals into switching points
- Switching function freely programmable with teach-in
- Threshold value, hysteresis or window comparator

Ordering data						
Type	For size	Input connection	Output connection	Switching output	Weight [g]	Part No. Type
Signal converter SVE4			Technical data → Internet: sve4			
	6	Socket M8x1, 4-pin	Plug M8x1, 4-pin	2x PNP	19	544216 SVE4-HS-R-HM8-2P-M8
				2x NPN		544219 SVE4-HS-R-HM8-2N-M8

Ordering data – Connecting cables					Technical data ➔ Internet: nebu	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type	
Connection between position sensor and signal converter						
	Straight socket, M8x1, 4-pin	Straight plug, M8x1, 4-pin	2.5	554035	NEBU-M8G4-K-2.5-M8G4	
Connection between signal converter and controller						
	Straight socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	541342	NEBU-M8G4-K-2.5-LE4	
			5	541343	NEBU-M8G4-K-5-LE4	
	Angled socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	541344	NEBU-M8W4-K-2.5-LE4	
			5	541345	NEBU-M8W4-K-5-LE4	

Parallel grippers DHPS

Accessories

FESTO

Proximity sensor for size 10 ... 35

Ordering data – Proximity sensors for T-slot, magneto-resistive						Technical data → Internet: smt
	Type of mounting	Electrical connection, connection direction	Switching output	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot lengthwise	Cable, 3-wire, lateral	PNP	2.5	547859	SMT-8G-PS-24V-E-2,5Q-OE
		Plug M8x1, 3-pin, lateral		0.3	547860	SMT-8G-PS-24V-E-0,3Q-M8D
		Cable, 3-wire, lateral	NPN	2.5	8065028	SMT-8G-NS-24V-E-2,5Q-OE
		Plug M8x1, 3-pin, lateral		0.3	8065027	SMT-8G-NS-24V-E-0,3Q-M8D

Proximity sensor for size 10 ... 35, with sensor rail HGP-SL10-...

Ordering data – Proximity sensors for C-slot, magneto-resistive						Technical data → Internet: smt
	Type of mounting	Electrical connection, connection direction	Switching output	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot lengthwise	Cable, 3-wire, lateral	PNP	2.5	547862	SMT-10G-PS-24V-E-2,5Q-OE
		Plug M8x1, 3-pin, lateral		0.3	547863	SMT-10G-PS-24V-E-0,3Q-M8D
		Cable, 3-wire, lateral	NPN	2.5	8065030	SMT-10G-NS-24V-E-2,5Q-OE
		Plug M8x1, 3-pin, lateral		0.3	8065029	SMT-10G-NS-24V-E-0,3Q-M8D

Ordering data – Connecting cables

					Technical data → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type	
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541333	NEBU-M8G3-K-2.5-LE3	
			5	541334	NEBU-M8G3-K-5-LE3	
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541338	NEBU-M8W3-K-2.5-LE3	
			5	541341	NEBU-M8W3-K-5-LE3	

Position transmitter

The position transmitter continuously senses the position of the piston.
It has an analogue output with an output signal in proportion to the piston position.

Ordering data – Position transmitters for T-slot

Ordering data – Position transmitters for T-slot								Technical data ➔ Internet: position transmitter	
	For size	Position measuring range	Analogue output		Type of mounting	Electrical connection	Cable length [m]	Part No.	Type
			[V]	[mA]					
	10 ... 35	0 ... 40	0 ... 10	–	Insertable in slot from above	Plug M8x1, 4-pin, in-line	0.3	553744	SMAT-8M-U-E-0,3-M8D
	35	0 ... 50	–	4 ... 20	Insertable in slot from above	Plug M8x1, 4-pin, in-line	0.3	1531265	SDAT-MHS-M50-1L-SA-E-Q3-M8

Ordering data – Connecting cables

					Technical data → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type	
	Straight socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	541342	NEBU-M8G4-K-2.5-LE4	
			5	541343	NEBU-M8G4-K-5-LE4	
	Angled socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	541344	NEBU-M8W4-K-2.5-LE4	
			5	541345	NEBU-M8W4-K-5-LE4	

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